

## **REMARKS/ARGUMENTS**

### **I. Status of the Application**

Upon entry of this amendment, claims 6-24 are pending in the present Application. In an Office Action mailed on October 7, 2004, the Examiner accepted into the record a preliminary amendment filed on April 9, 2002. The Examiner also objected to claims 1, 5, 6, 8-13, 16, 18 based on certain claim informalities, rejected claims 1-7, 15, and 18 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,442,380 ("Mohindra"), rejected claims 10-14 under 35 U.S.C. 103(a) as being unpatentable over Mohindra in view of the following references, respectively; 6,480,066 ("Madni"), JP 60-070,807 ("Imamura"), JP 08-340,226 ("Sakaki"), US 6,628,170 ("Titus"), US 6,295,451 ("Mimura"), and rejected claim 20 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,732,342 ("Roth") in view of Mohindra.

The Examiner also indicated that claims 8-9, 19, and 21-24 would be allowable if rewritten to overcome the minor objections stated in the Office Action, and to include all of the limitations of their base claims and any intervening claims.

The Examiner also indicated that claims 16-17 would be allowable if rewritten to overcome the minor objections stated in the Office Action.

### **II. The Presently Claimed Invention**

The presently claimed invention claims a radio receiver comprising a continuously variable gain low noise amplifier (LNA) coupled to a subsequent variable gain amplifier (VGA), a demodulator to generate an automatic gain control signal indicating a power of level of a desired received signal, and a control network coupled to receive the gain control signal to optimally set the gain of the LNA and VGA in a way that minimizes LNA gain while maintaining the required signal quality for proper demodulation.

### **III. The Cited References**

The Mohindra reference describes an AGC that incrementally adjusts gain by predetermined steps until a RSSI signal falls within set limits.

The Madni reference discloses a variable LNA with shunt feedback.

The Imamura reference discloses an LNA with a varactor used as a load.

The Sakaki reference discloses an LNA comprising a pin diode.

The Titus reference discloses an LNA with a current steering circuit.

The Mimura reference discloses that a received power indicator is an estimate of the bit energy per spectral noise density.

The Roth reference discloses a continuously variable RF amplifier.

IV. Cancellation of claims 1-5

Applicant herein cancels claims 1-5.

V. Objections to claims 1, 5, 6, 8-13, 16, 18

The Examiner objected to claims 1, 5, 6, 8-13, 16, and 18 because of certain claim informalities. Applicant respectfully traverses the Examiner's objections with respect to claims 8-9.

Applicant herein cancels claims 1-5, and amends claims 6, 10-13, 16, and 18 to correct the informalities cited by the Examiner. Applicant submits that the language of claims 8-9 is definite and accurately describes the operation of the recited control network so that the corrections suggested by the Examiner are not required. Therefore, Applicant respectfully requests that the Examiner's objections to claims 1, 5, 6, 8-13, 16, 18 be withdrawn.

VI. Rejection of Claims 1-7, 15, and 18 under 35 U.S.C. 102(e)

The Examiner rejected claims 1-7, 15, and 18 under 35 U.S.C. 102(e) as being anticipated by Mohindra. Applicant herein cancels claims 1-5, and amends claims 6 and 18. Applicant submits that for the following reasons claims 6-9, 15, 18, and 19 are allowable over Mohindra under 35 U.S.C. 102(e).

Claims 6 and 18

Claims 6 and 18 are allowable over Mohindra under 35 U.S.C. 102(e) because Mohindra fails to disclose or suggest all of the recited claim elements of claims 6 and 18. For example, Applicant herein amends claim 6 to recite;

*"a control network coupled to the LNA control input and the VGA control input, and*

*wherein the control network operates to adjust the LNA and VGA gain factors based on a received power indicator of the RF signal, and wherein the gain factor of the LNA is adjusted so that a signal-to-noise ratio required for demodulation of the RF signal is met with a selected margin and linearity requirements of the receiver are reduced.”*

Mohindra fails to disclose or suggest the above recited claim structure.

The Examiner has stated in the Office Action (Page 12, item 12) that, “*Mohindra and the cited prior art fails to further disclose ... adjusting the gain factor of the LNA so that a signal-to-noise ratio required for demodulation of the RF signal is met with a selected margin and linearity requirements of the receiver are reduced.*”

Applicant herein amends claim 18 to recite the above claim element. Therefore, because claims 6 and 18 recite a claim element that the Examiner has determined is not disclosed in the cited prior art, Applicant respectfully submits that claims 6 and 18 are allowable over Mohindra under 35 U.S.C. 102(e) and respectfully requests that the Examiner’s rejection of claims 6 and 18 be withdrawn.

#### Claims 7-9 and 15

Because claims 7-9 and 15 depend from claim 6, they are therefore allowable over Mohindra for at least the same reasons as claim 6.

Therefore, Applicant submits that claims 7-9 and 15 are allowable and respectfully requests that the Examiner’s rejection of claims 7-9 and 15 under 35 U.S.C. 102(e) be withdrawn.

#### Claim 19

Applicant submits that because claim 19 depends from claim 18, it is therefore allowable over the cited art for at least the same reasons as claim 18. Therefore, Applicant submits that claim 19 is allowable.

#### **VII. Rejection of Claims 10-14, and 20 under 35 U.S.C. 103(a)**

The Examiner rejected claims 10-14 under 35 U.S.C. 103(a) as being unpatentable over Mohindra in view of the following references, respectively; Madni, Imamura, Sakaki, Titus, and

Mimura. The Examiner also rejected claim 20 under 35 U.S.C. 103(a) as being unpatentable over Roth in view of Mohindra.

#### Claims 10-14

Claims 10-14 are allowable under 35 U.S.C. 103(a) because Mohindra, Madni, Imamura, Sakaki, Titus, and Mimura, either alone or in combination, fail to disclose or suggest all of the recited claim limitations of claims 10-14. For example, claims 10-14 depend from claim 6. As discussed above, (see Claims 6 and 18 above) claim 6 recites at least one claim element that the Examiner has stated is not disclosed in the cited prior art. For example, claim 6 recites, *"...wherein the gain factor of the LNA is adjusted so that a signal-to-noise ratio required for demodulation of the RF signal is met with a selected margin and linearity requirements of the receiver are reduced."* Neither Mohindra or any of the cited references (i.e., Madni, Imamura, Sakaki, Titus, and Mimura) disclose or suggest such a claim element.

Therefore, because claims 10-14 depend from claim 6, and claim 6 is allowable over the cited prior art under both 35 U.S.C. 102(e) and 35 U.S.C. 103(a), Applicant submits that claims 10-14 are allowable for at least the same reasons as claim 6. Applicant therefore respectfully requests that the Examiner's rejection of claims 10-14 under 35 U.S.C. 103(a) be withdrawn.

#### Claim 20

Claim 20 is allowable under 35 U.S.C. 103(a) because Roth and Mohindra, either alone or in combination, fail to disclose or suggest all of the recited claim limitations of claim 20. For example, Applicant herein amends claim 20 to recite;

*"a control network coupled to receive the gain control signal to optimally set the gain of the LNA and VGA in a way that minimizes LNA gain while maintaining the required signal quality for proper demodulation."*

The Examiner has stated in the Office Acton (Page 11, item 11) that, "Roth et al, Mohindra, and the cited prior art fails to further disclose ... adjusting the gain of the continuously variable LNA ... in a way that minimizes LNA gain while maintaining the required signal quality for proper demodulation"

Therefore, because claim 20 recites a claim element that the Examiner has determined is

not disclosed or suggested in the cited prior art, Applicant respectfully submits that claim 20 is allowable over Roth and Mohindra under 35 U.S.C. 103(a) and respectfully requests that the Examiner's rejection of claim 20 be withdrawn.

Claims 21-24

Applicant submits that because claims 21-24 depend from claim 20, they are therefore allowable over the cited art for at least the same reasons as claim 20. Therefore, Applicant submits that claims 21-24 are allowable.

**VIII. Allowable Subject Matter**

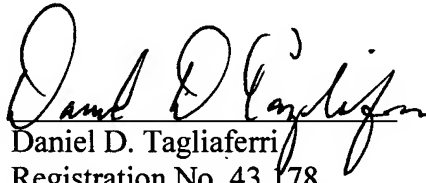
The Examiner indicated that claims 16-17 would be allowable if rewritten to overcome the minor objections stated in the Office Action. Applicant has corrected the minor claim objections to claim 16 (see above) and now submits that claims 16-17 are allowable.

**CONCLUSION**

Upon entry of this amendment, claims 6-24 are pending in the present Application. Applicant respectfully submits that no new matter has been entered by way of this response to the Office Action.

Applicant believes that all pending claims are now in condition for allowance. Reconsideration of the rejections and objections is respectfully requested. If the Examiner believes that a telephone conference would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at (510) 521-6980.

Respectfully submitted,

  
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